

WHAT IS CLAIMED IS:

1. A high frequency filter comprising:
a dielectric substrate;
a ground electrode arranged on a main surface of the dielectric substrate;
a conductive through-hole; and
a plurality of microstrip line resonators formed on the other main surface of the dielectric substrate, one end of each resonator being grounded via the through-hole;
wherein the microstrip line resonators share the through-hole for grounding the one end of each resonator to be mutually coupled via the inductance of the through-hole.
2. The high frequency filter according to Claim 1, further comprising input/output wires connected to respective ones of the microstrip line resonators.
3. A filter device comprising the high frequency filter according to Claim 1, and further comprising a pair of terminals for connecting said filter into a circuit.
4. An electronic apparatus incorporating the filter device according to Claim 3, and further comprising a high-frequency circuit connected to at least one of said terminals.
5. An electronic apparatus incorporating the high frequency filter according to Claim 1, and further comprising a high-frequency circuit connected to said filter.
6. A high frequency filter comprising:
a dielectric substrate;
a ground electrode arranged on a main surface of the dielectric substrate;

a conductive through-hole; and

two microstrip line resonators formed on the other main surface of the dielectric substrate, a first end of each resonator being grounded via the through-hole;

wherein the two microstrip line resonators share the through-hole for grounding the one end of each resonator to be mutually coupled via the inductance of the through-hole.

7. The high frequency filter according to Claim 6, wherein the two microstrip line resonators are spirally formed by being wound on said dielectric substrate in mutually opposite directions.

8. The high frequency filter according to Claim 7, wherein a side edge of one of the two microstrip line resonators is arranged near a side edge of the other microstrip line resonator to mutually couple the resonators.

9. The high frequency filter according to Claim 8, wherein the second end of one of the two microstrip line resonators is opposed to the side edge of the other microstrip line resonator so as to generate a capacitance to mutually couple the resonators.

10. The high frequency filter according to Claim 7, wherein the second end of one of the two microstrip line resonators is opposed to the side edge of the other microstrip line resonator so as to generate a capacitance to mutually couple the resonators.

11. The high frequency filter according to Claim 6, wherein a side edge of one of the two microstrip line resonators is arranged near a side edge of the other microstrip line resonator to mutually couple the resonators.

12. The high frequency filter according to Claim 11, wherein the second end of one of the two microstrip line resonators is opposed to the side edge of the other microstrip line resonator so as to generate a capacitance to mutually couple the resonators.

13. The high frequency filter according to Claim 6, wherein the second end of one of the two microstrip line resonators is opposed to the side edge of the other microstrip line resonator so as to generate a capacitance to mutually couple the resonators.

14. The high frequency filter according to Claim 6, further comprising input/output wires connected to respective ones of the microstrip line resonators.

15. A filter device comprising the high frequency filter according to Claim 6, and further comprising a pair of terminals for connecting said filter into a circuit.

16. An electronic apparatus incorporating the filter device according to Claim 15, and further comprising a high-frequency circuit connected to at least one of said terminals.

17. An electronic apparatus incorporating the high frequency filter according to Claim 6, and further comprising a high-frequency circuit connected to said filter.

1001634004
"REP. 4004"